

# Summary of Phase 1 Supplemental Investigation Activities in Area 1 (Morrow Dam to Plainwell Dam)

Kalamazoo River Superfund Site

September 2008 Public Meeting, Plainwell, MI



# Investigation Activities in Area 1



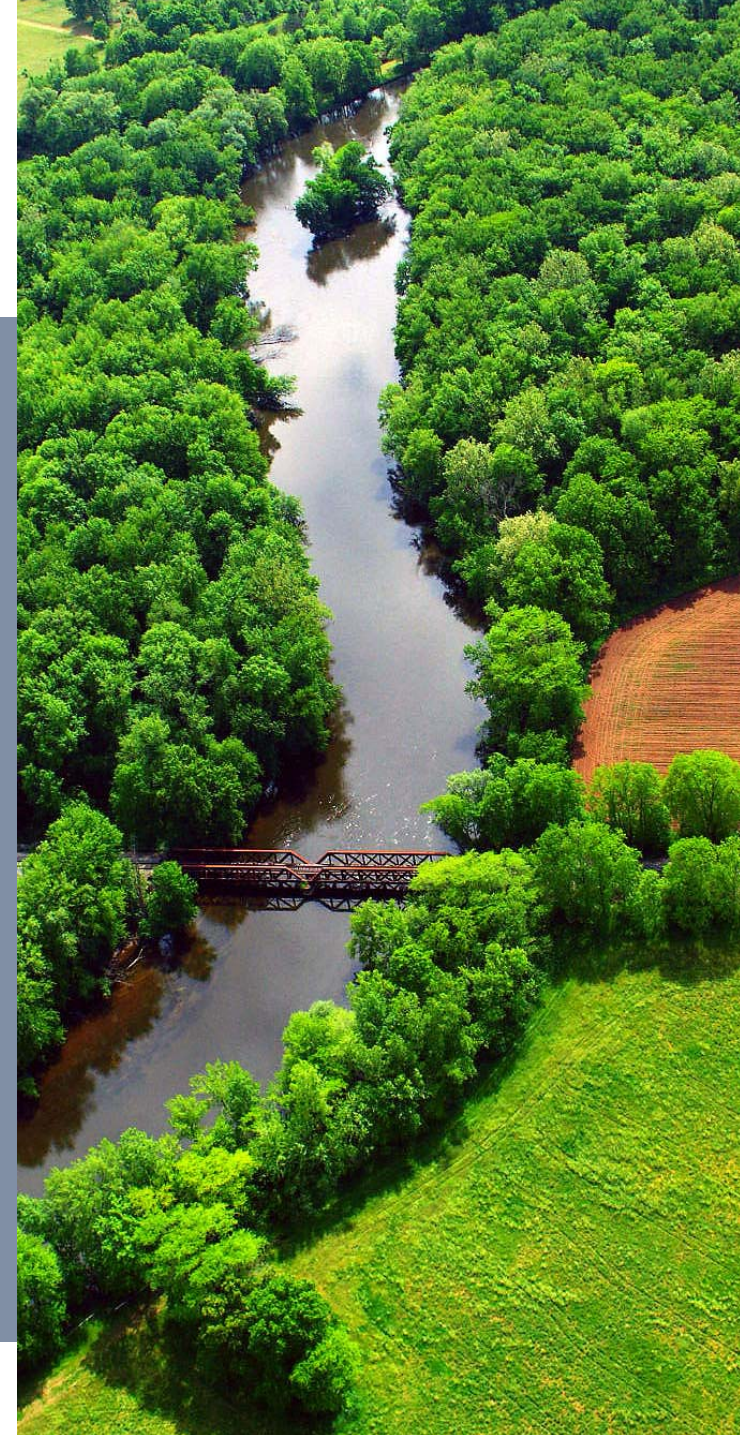
- Activities include Supplemental Remedial Investigation (SRI) and Plainwell Time-Critical Removal Action (TCRA) components
- Area 1 Work Plan describes a phased sampling program
- After Phase 1, each subsequent phase (as necessary) will be developed based on previous results



# Area 1/Phase 1

## Activities Completed in 2007

- **Mayor's Riverfront Park to Crown Vantage**
  - Surface sediment sampling
  - Sediment probing and core collection
- **Plainwell No. 2 Dam to Mill Race Confluence**
  - Surface sediment sampling
  - Top of bank soil sampling
  - Sediment probing and core collection
  - Focused sample location reconnaissance
- **Crown Vantage Area**
  - Reconnaissance of low-lying areas
  - Sediment probing in side channel
- **Plainwell No. 2 Dam Area**
  - Historic inundation area reconnaissance



# Area 1/Phase 1 Activities Completed in 2007 (cont'd)

- **Portage Creek**
  - Sediment probing
  - Assessment of 100-year floodplain boundaries
- **Plainwell Time Critical Removal Action Effectiveness Monitoring**
  - Upstream and downstream surface water sampling
  - Yearling smallmouth bass sampling in Otsego City Impoundment
  - Bathymetric survey in Plainwell Impoundment
  - Post-construction surface sediment sampling in 2007 removal areas



Portage Creek



Upstream Portion of TCRA

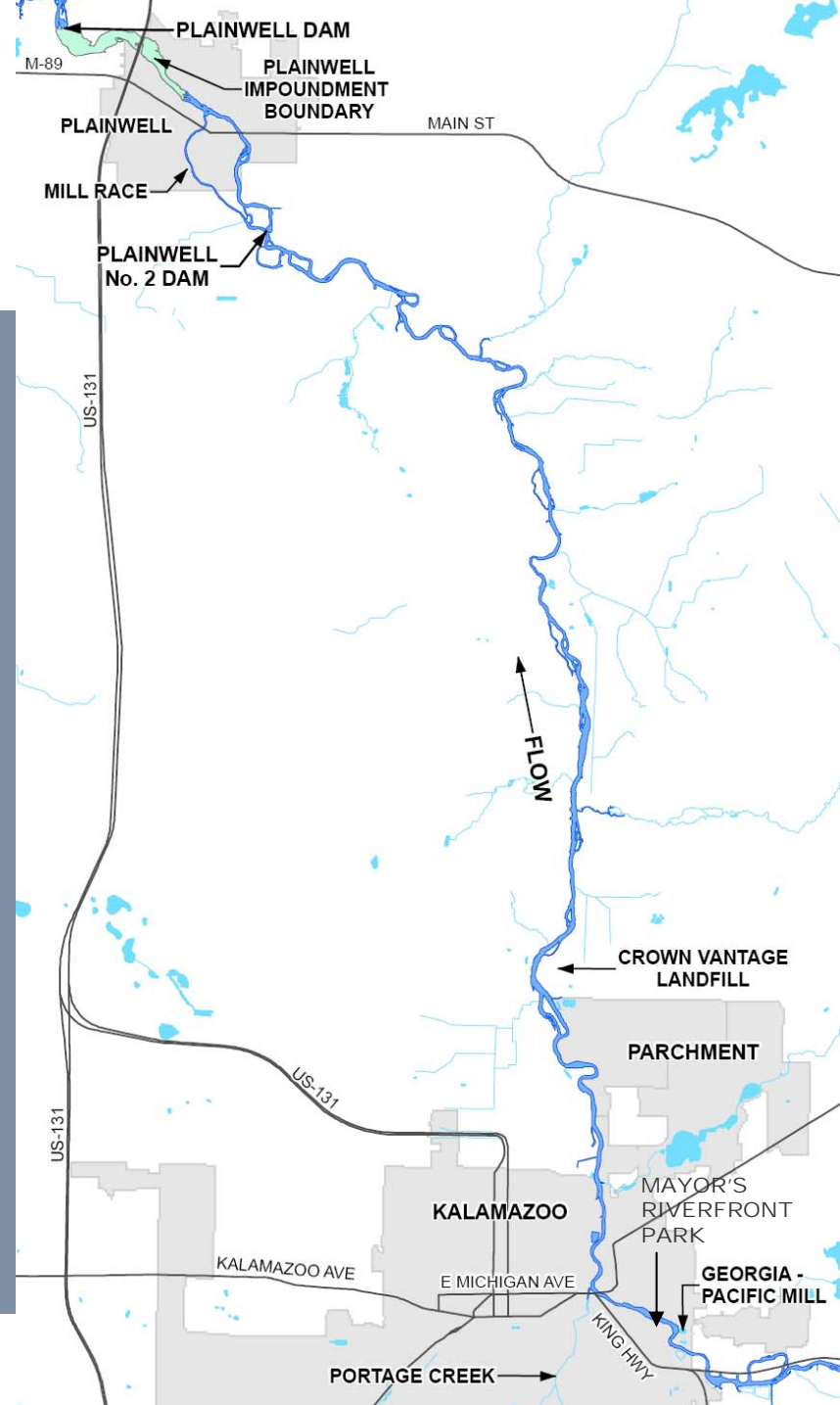


TCRA Water Control Structure



# Mayor's Riverfront Park to Crown Vantage Area

- **Sediment Probing and Core Sampling**
  - 80 cores collected and retained for PCB analysis
- **Surface Sediment Sampling**
  - 32 previously sampled locations sampled and analyzed for PCBs



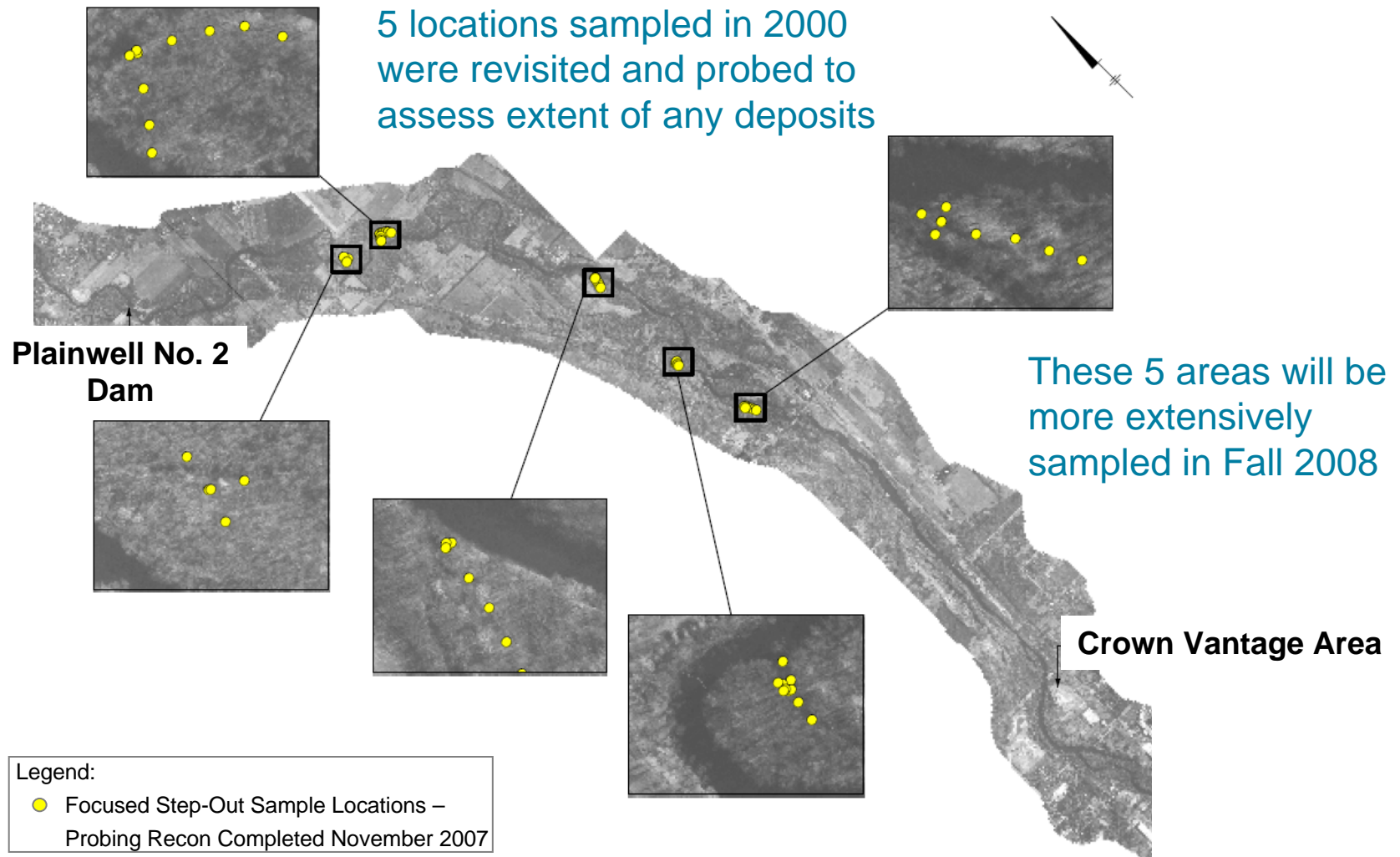
# Mayor's Riverfront Park to Portage Creek Confluence Sample Locations



# Portage Creek Confluence to Crown Vantage Area Sample Locations



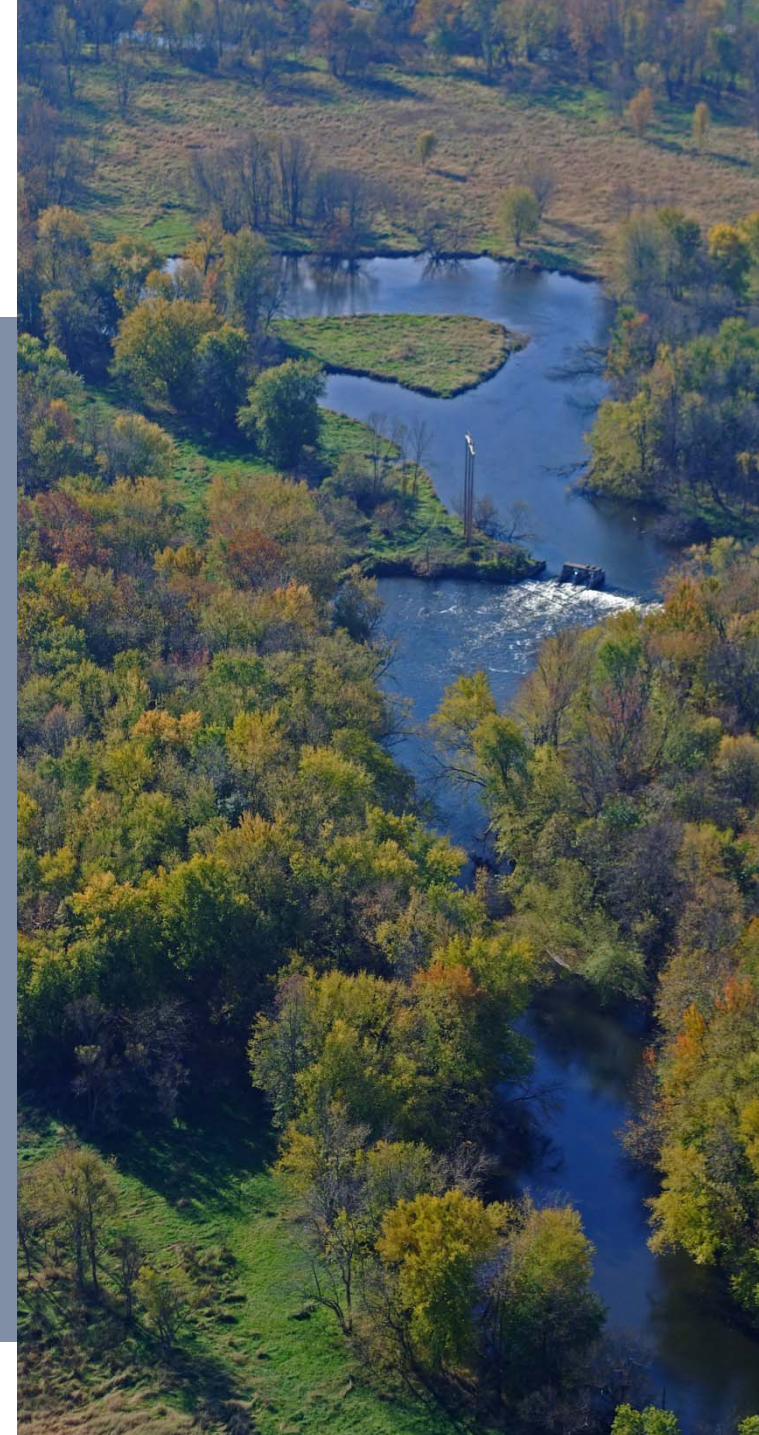
# Crown Vantage Area to Plainwell No. 2 Dam: Focused Sampling Locations





# Plainwell No. 2 Dam to the Plainwell Mill Race Confluence

- **Sediment Probing and Core Sampling**
  - 48 cores collected and retained for PCB analysis
- **Surface Sediment Sampling**
  - 23 samples collected and analyzed for PCBs
- **Top of Bank Soil Sampling**
  - 11 bank samples collected between the No. 2 Dam and Mill Race Confluence and analyzed for PCBs



# Crown Vantage Area Phase 1 Activities



## Crown Vantage Area Reconnaissance

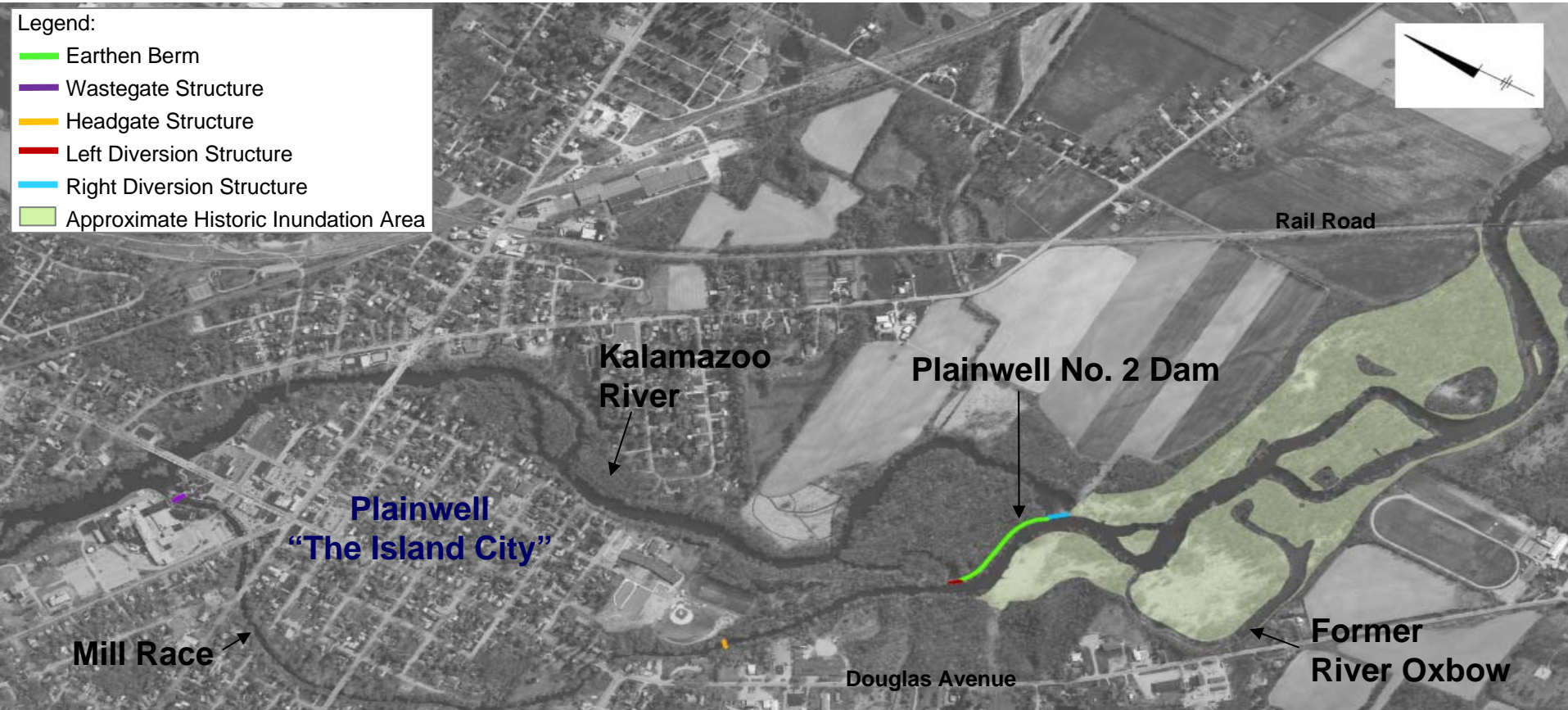
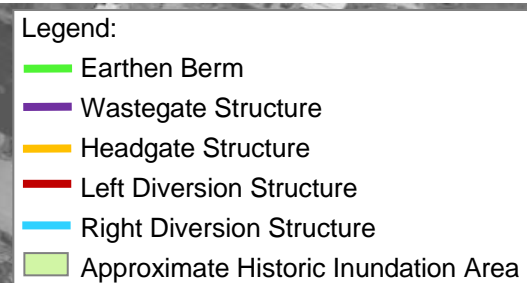
- The low-lying area adjacent to the Crown Vantage Landfill was surveyed to assess presence of materials remaining from landfill closure

## Crown Vantage Side Channel Probing

- Sediments within a localized side channel were probed in 40 locations

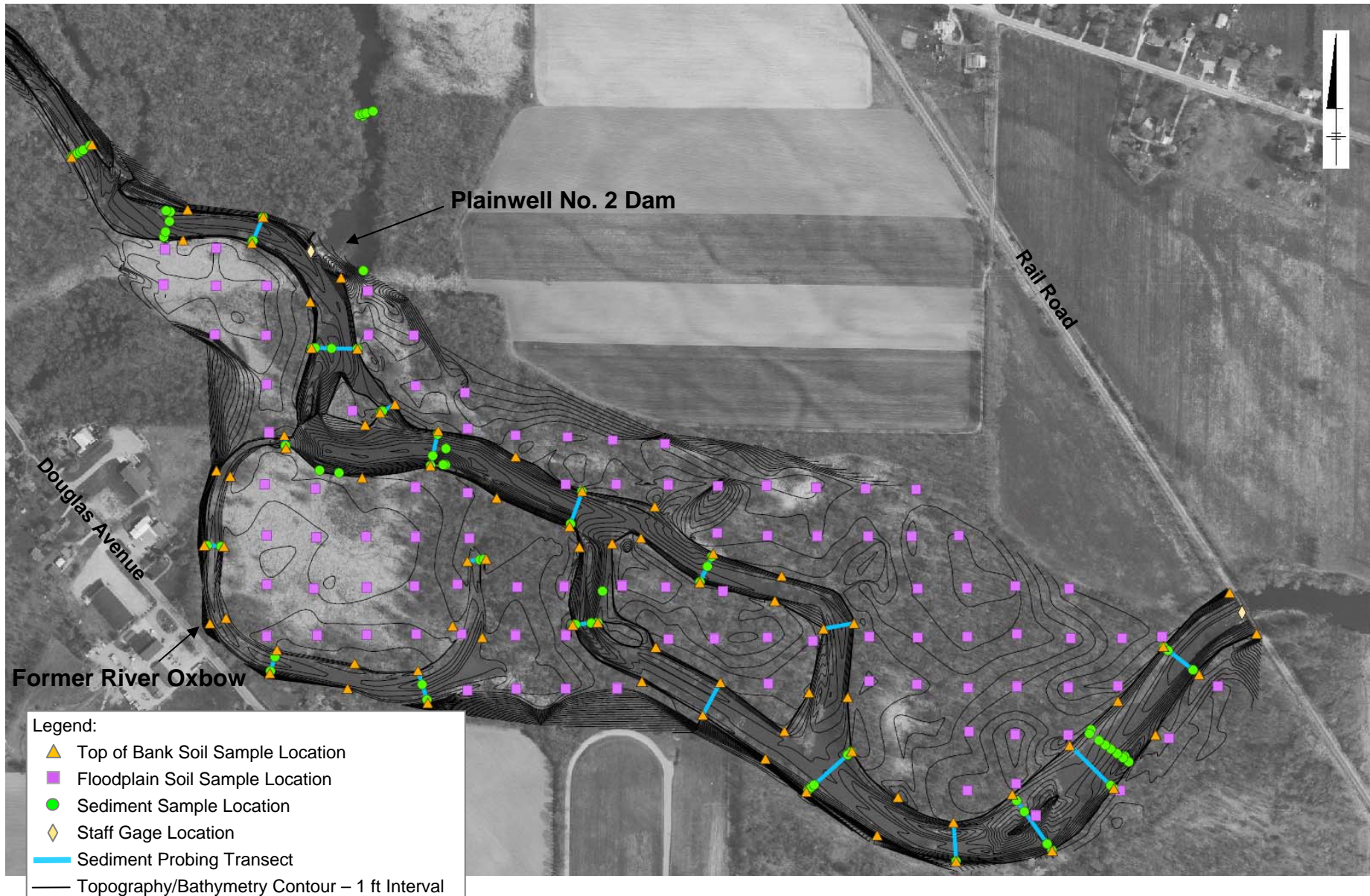


# Plainwell No. 2 Dam



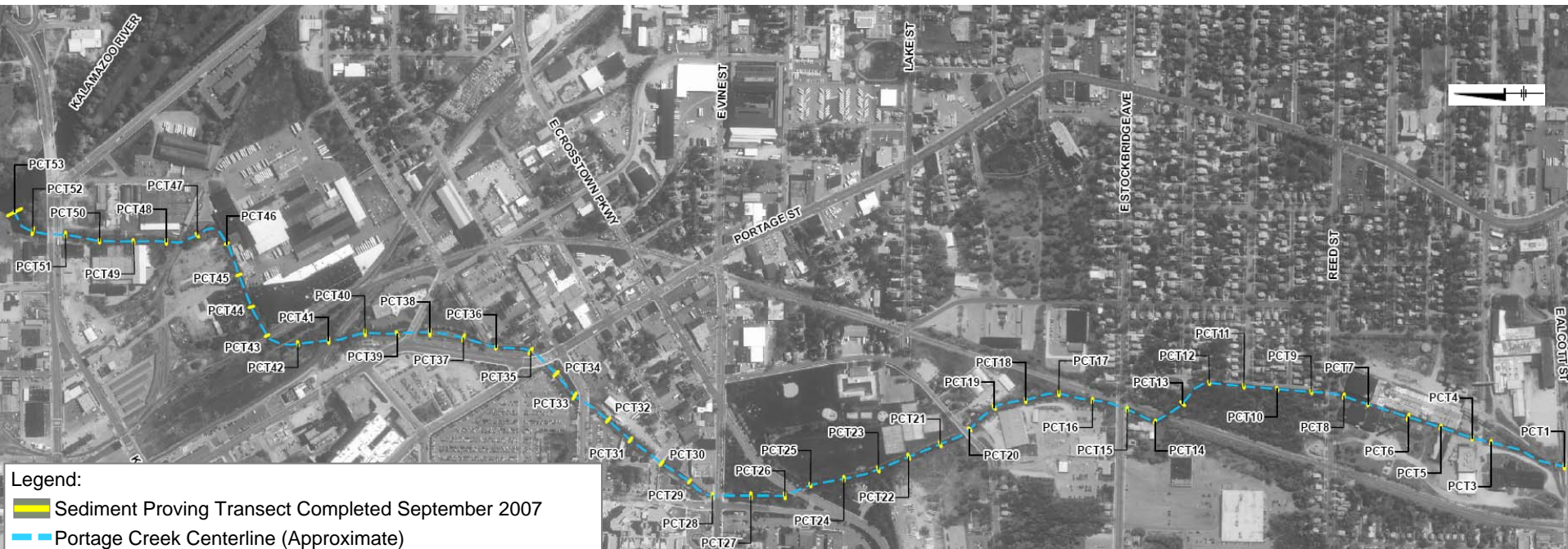
- Built in 1856 to divert portion of river flow through the Mill Race
- Partially dismantled in the early 1980s but still serves to maintain flow in the Mill Race and give The Island City its name
- Did not create an impoundment, but altered flooding characteristics in this area

# Plainwell No. 2 Dam Area Investigation





# Portage Creek Sediment Probing



## Sediment Probing

- 388 locations surveyed and probed from Alcott St. to Kalamazoo River

## Mapping of Sediment Deposits

- Sediment types were visually evaluated and sediment thickness recorded for use in mapping depositional areas



# Portage Creek Floodplain Reconnaissance

## Evaluating 100-year Floodplain

- Existing FEMA map assessed for accuracy through field survey





# Plainwell TCRA Effectiveness Monitoring Objectives

- Assess effects of construction activities on PCBs and solids transport
- Assess fish exposure to PCBs in the Otsego City Impoundment
- Measure bathymetric changes to the river associated with the construction activities and dam removal



# TCRA Effectiveness Monitoring Completed to Date

- **Regular Upstream-Downstream River Water Sampling for PCB and Suspended Sediment**
  - Main St. Bridge in Plainwell
  - Farmer St. Bridge in Otsego City
- **Yearling Smallmouth Bass Sampling in Otsego City Impoundment**
  - Collected in fall 2006 and 2007
- **Bathymetric Survey in the former Plainwell Impoundment**
  - River bottom surveys in 2006 and at end of 2007 construction season
- **Post-construction Sediment PCB Sampling in 2007 Removal Areas**
  - 30 samples collected from removal areas completed in 2007



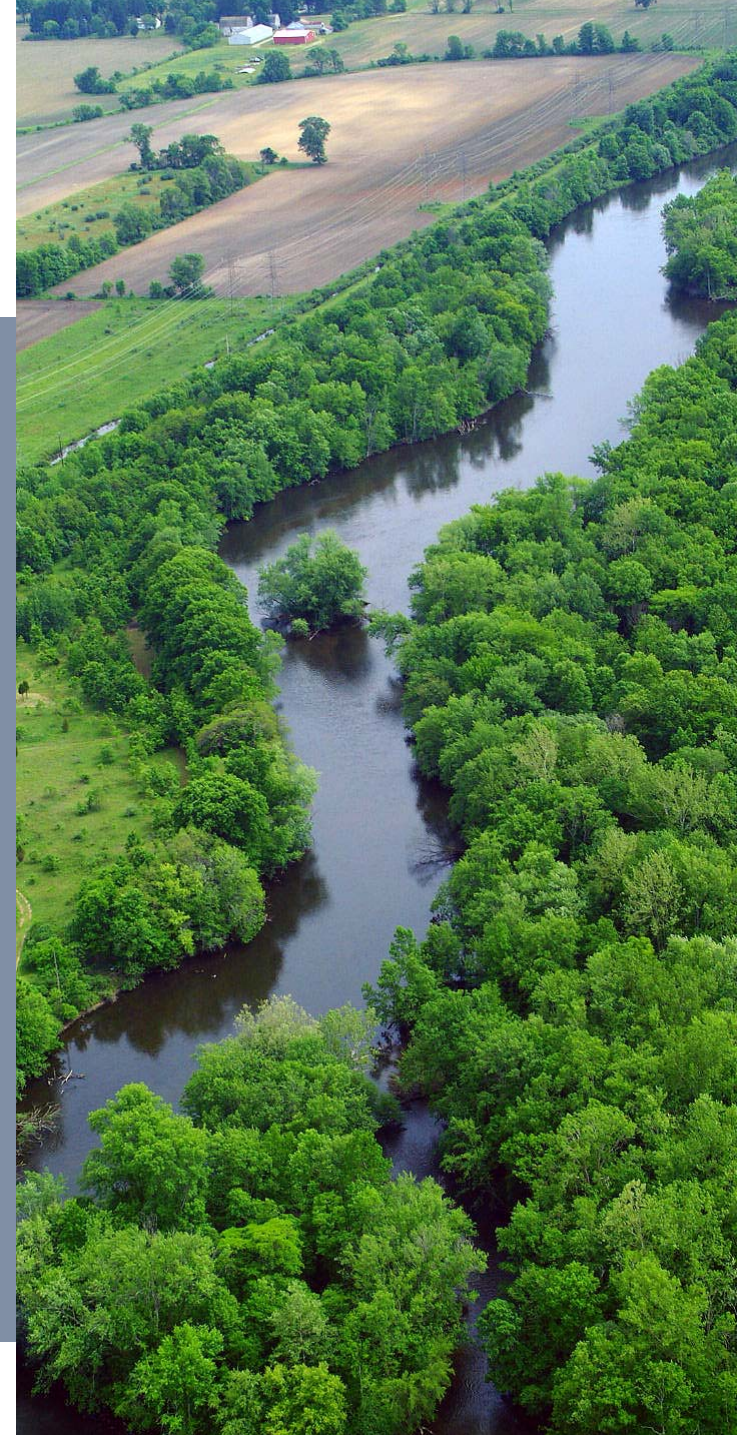


# Next Steps

## Area 1 Phase 2 SRI Activities

# Sampling Activities planned for 2008

- **Mayor's Riverfront Park to Plainwell Mill Race Confluence**
  - Approximately 48 sediment cores will be analyzed for PCB
  - Up to 42 soil/sediment samples will be collected from around the five focused sample locations for PCB analysis
- **Crown Vantage Area**
  - Additional sampling work plans will be reviewed and approved by USEPA





# Sampling Activities planned for 2008 (cont'd)



- **Portage Creek**
  - Approximately 40 sediment cores will be collected for PCB analysis
- **TCRA Effectiveness Monitoring**
  - Bathymetric monitoring
  - Water column monitoring
  - Fish monitoring for Otsego City Impoundment
  - 2008 Post-removal sediment sampling